Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Form PCT/IPEA/416
B14332.3 EE		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/FR2004/050195	17.05.2004	21.05.2003

International Patent Classification (IPC) or national classification and IPC

Applicant

COMMISSARIAT A L'ENERGIE ATOMIQUE

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of _____ sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

   a. ☐ *(sent to the applicant and to the International Bureau)* a total of _____ sheets, as follows:

      ☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s))

      _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☒	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/FR2004/050195

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

☐ international search (Rule 12.3 and 23.1(b))

☐ publication of the international application (Rule 12.4)

☐ international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1-60 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:

nos. 1-26 as originally filed/furnished

nos.* _____ as amended (together with any statement) under Article 19

nos.* _____ received by this Authority on _____

nos.* _____ received by this Authority on _____

☒ the drawings:

sheets 1/4-4/4 as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing *(specify)*: _____

☐ any table(s) related to sequence listing *(specify)*: _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing *(specify)*: _____

☐ any table(s) related to sequence listing *(specify)*: _____

* *If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/FR2004/050195

Box No. III **Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 14

because:

☒ the said international application, or the said claims Nos. 14
relate to the following subject matter which does not require an international preliminary examination (*specify*):

The present Authority considers that the subject matter of claim 14 is covered by the provisions of PCT Rule 67.1(iv) (the scope of the claim also encompasses *in vivo* diagnostic methods using a device implanted in the body). For this reason, no opinion will be given on the question of whether the subject matter of these claims is industrially applicable (PCT Article 34(4)(a)(i)).

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. _____
are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for said claims Nos. _____

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form
- ☐ has not been furnished
- ☐ does not comply with the standard

the computer readable form
- ☐ has not been furnished
- ☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See Supplemental Box for further details.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/FR2004/050195

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-26	YES
	Claims		NO
Inventive step (IS)	Claims	1-26	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-13, 15-26	YES
	Claims	14	NO

2. Citations and explanations (Rule 70.7)

1. Reference is made to the following documents:

D1: US-B-6 280 595
D2: WO-A-99/29711
D3: US-A-6 113 768

2. The subject matter of claims 1 to 26 is considered to be novel and inventive (PCT Article 33(2) and (3)), for the following reasons:

D1 describes a combinatorial synthesis device including a plurality of electrodes arranged in closely spaced rows on a substrate. D1 describes the use of the electrodes for electrochemically generating H^+ (or OH^-) ions useful for deprotecting (activating) groupings on the device surface (column 5, line 5 to column 6, line 42; column 11, line 30 to column 12, line 49; drawings 1 to 12 and 31).

D2 describes a microsystem including a plurality of electrodes arranged in closely spaced rows on a substrate for synthesising and binding oligo-

nucleotides (see the drawings).

D3 describes a device including a plurality of microelectrodes arranged in closely spaced rows on a substrate. The microelectrodes are used to electrochemically generate H^+ (or OH^-) ions useful for modulating the cell adhesion properties of the surface (column 6, lines 38-47).

None of documents D1 to D3 describes a device in which the working electrode is adjacent to or surrounds the binding area, as in the device according to claim 1.

In the devices described in documents D1 and D2, the working electrode is the binding area. The device described in D3 does not have a binding area in the same sense as in the present application. Moreover, the electrical contact with the target has to be via the surface of the working electrode.

It follows that a person skilled in the art aware of the teaching of documents D1 to D3 would have no reason to alter the device described in D1 so as to arrive at the device according to claim 1 (and claims 2 to 12). Providing the binding area next to or around the working electrode enables exposed electrodes (i.e. electrodes with no protective layer) to be used, thereby simplifying the manufacture of the device and broadening the range of molecules that can be attached to the

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

substrate.

For equivalent reasons, the subject matter of claims 13 to 26 is also considered to be novel and inventive.